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The psychological impact of diabetes: A practical guide for the nurse practitioner

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Abstract

Purpose: To describe the psychological impact of diabetes and to present a number of practical ways that nurse practitioners (NPs) can assess and address these concerns in the context of primary care.
Data sources: Theory and research articles are reviewed from the fields of nursing and psychology describing the psychological problems unique to those with diabetes. A case study is provided for practical application of the clinical tools presented.
Conclusions: The psychological consequences of diabetes can be significant, including feelings of loss, anger, depression, anxiety, and disordered eating. There are a number of useful tools and resources for NPs to use in the primary care setting to effectively manage the multifaceted impact of diabetes on patients' lives. These tools include listening, showing empathy, comprehensive assessment of psychosocial issues, equipping patients for self-management, encouraging self-care, teaching stress management skills, and offering additional mental health support. Psychotherapy can help patients to address emotional and behavioral aspects of diabetes.
Implications for practice: Assessing and addressing the psychological aspects of illness is an important part of caring for people with diabetes. There are many tools and resources available to NPs that can be implemented with minimal training.

George is a 55-year-old male with hypertension, hyperlipidemia, and type 2 diabetes, diagnosed at age 30. He is married, has three children, and works 60 h a week as a computer programmer. He presents at the clinic for a routine follow-up. His HgbA1C is 9.5%, up from 8.5% 3 months ago, and he has gained 8 pounds. He reports not testing his glucose levels much lately, as he knows that the readings will be too high and this is discouraging. He also doesn't feel that he has the have time to deal with his diabetes. In further targeted discussion, he describes poor sleep over the past 3 months, ever since his best friend died of a heart attack. He thinks about this constantly, along with his risk for heart attack and diabetes complications. He has started drinking alcohol at night to help him sleep.

Diabetes is a pervasive illness that impacts all domains of life. Aside from the staggering economic and medical consequences of diabetes, the psychological and quality-of-life costs of diabetes are also substantial. The prevalence of depression is twice as high in people with diabetes compared to the general population (Li, Ford, Strine, & Mokdad, 2008), and there is a strong association between depression and those with complications from diabetes (DeGroot, Anderson, Freedland, Clouse, & Lustman, 2001). Estimates of anxiety disorders (Culpepper, 2009) and eating disorders are also high (Colton, Olmsted, Daneman, Rydall, & Rodin, 2007). Nurse practitioners (NPs) are well positioned to assess and to intervene when patients are experiencing psychological and emotional problems related to their diabetes. This article is intended to be a practical guide for NPs to identify and address common psychological concerns in their patients with diabetes, such as George, described in the case study above. These strategies can complement and facilitate the medical approach to diabetes treatment.

Psychological and emotional factors related to diabetes

There are many reasons why diabetes can result in psychological and emotional distress, such as fundamental changes to self-identity and many associated losses (e.g., loss of freedom and spontaneity, lifestyle choices, health, and relationships). Life becomes more challenging because of the necessary continuous and complex management. Frustration can arise because diabetes is an illness that is managed, not controlled. It is little wonder that many people with diabetes report feeling sad, angry, overwhelmed, afraid, guilty, ashamed, and discouraged (Skovlund & Peyrot, 2005). It is also not surprising that mental health disorders are more common than in the general population (Li et al., 2008). The diagnosis and demands of self-management can lead to psychological problems, and likewise psychological problems can make it more difficult for people to manage diabetes (Bogner, Morales, de Vries, & Cappola, 2012; Gonzalez et al., 2008). The bidirectional relationship between psychological problems and diabetes is also impacted by preexisting psychological problems and vulnerabilities (White, 2001).

Clearly, not all people who are diagnosed with and who are living with diabetes develop psychological problems. Lazarus and Folkman's (1984) well-known theory of coping provides a good explanation for the varied responses. The theory states that it is not an event that causes an emotional response, but rather one's interpretation of both the event and of one's ability to cope with it. If people tell themselves that their diabetes is fatal and that they cannot do anything to manage or improve their health, they are more likely to be passive, hopeless, and disengaged from their health care. In contrast, those who tell themselves that their diabetes is serious but manageable are more likely to feel hopeful and be an active participant in their health care.

What is not a "normal" response?

It is important to be able to distinguish between a normal emotional response and a pathological one. The three psychiatric diagnoses most often seen in patients with diabetes are depression, anxiety, and eating disorders (Colton et al., 2007; Culpepper, 2009; DeGroot et al., 2001). Common symptoms of these disorders are listed in Tables 1–3. Discerning emotional distress is complicated by the fact that the symptoms of depression and anxiety can often be similar to that of hypoglycemia and hyperglycemia (e.g., irritability, difficulty concentrating, fatigue, heart palpitation, and dizziness).

Table 1 Common symptoms of depression

- Feelings of helplessness and hopelessness
- Loss of interest in daily activities
- Appetite or weight changes
- Impaired sleep and energy
- Anger or irritability
- Concentration problems

Note. The diagnostic criteria for depression, as outlined in the Diagnostic and Statistical Manual (DSM-IV), include the following:

- Symptoms must have occurred for at least 2 weeks.
- At least one symptoms is depressed mood and/or loss of interest or pleasure.
- At least five out of seven specific symptoms are endorsed.
- The symptoms have caused the individual distress and/or impairment in several.
- Domains of functioning.

Table 2 Common symptoms of anxiety

- Feeling tense, irritable, and/or jumpy
- Anticipating the worst
- Chest pain and/or racing heart
- Stomach upset or dizziness
- Shortness of breath
- Headaches

Note. Trained metal health providers use the DSM-IV, which lists the complete diagnostic criteria for anxiety disorders, to make formal mental health diagnoses.

Table 3 Common signs of eating disorders

- Anxiety about or avoidance of being weighed
- Preoccupation with body size, shape, or weight
- Irregular or no menses
- Binging with food frequently
- Excessive exercise, laxatives, and/or diet pills
- Misuse of insulin for weight loss

Note. Trained metal health providers use the DSM-IV, which lists the complete diagnostic criteria for anorexia, bulimia, binge eating, and eating disorder not otherwise specified, to make formal mental health diagnoses.

A meta-analysis revealed that the prevalence of depression among over 50,000 participants was twice as high for people with diabetes (17.6%) compared to those without diabetes (9.8%) (Ali, Stone, Peters, Davies, & Khunti, 2006). In the case study above, there are several signs that suggest that George may be experiencing depression, including fatigue, trouble sleeping, weight gain, and increased difficulty managing his diabetes. Depression not only makes people feel miserable, but it also makes it harder to manage their diabetes effectively. Psychotherapy and medication can reduce the emotional distress, associated morbidity, health risks, and medical costs, as well as improve treatment adherence (Markowitz, Gonzalez, Wilkinson, & Safren, 2011). It is important to note significant changes in mood, energy levels, sleep, and

social activities, and to make referrals to mental health professions if depression is suspected (see Table 1). The Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001) is a well-validated, brief measure that is often used in primary care to track the presence or changes in depressive symptoms.

Anxiety is also commonly experienced among patients with diabetes (Culpepper, 2009). Anxiety may manifest as an apparent lack of motivation or adherence to treatment. For example, George's anxiety about dying of a heart attack, like his best friend, seems to be making it harder for him to take care of himself. Anxiety can also manifest as overmanagement. For instance, fear of hypoglycemia may result in obsessive compulsive behaviors, such as overfrequent glucose checking. As with depression, it is important to know the common signs of anxiety (see Table 2). The General Anxiety Disorder (GAD-7; Spitzer et al., 2006) is an excellent short-form measure to evaluate and monitor symptoms of anxiety.

Eating disorders are also common among people living with diabetes. Women with diabetes are at least twice as likely to develop an eating disorder as are women without diabetes (Colton et al., 2007). Bulimia is the most prevalent eating disorder among women with type 1 diabetes and binge eating disorder is the most prevalent among women with type 2 diabetes (Young-Hyman & Davis, 2010). The nature of the disease makes it necessary for individuals to pay close attention to their diet and activity level, which is a problem for those who already overly focus on diet and exercise. In addition, insulin treatment can be associated with weight gain, and manipulation of insulin/blood glucose levels can be used to induce weight loss. There are estimates that between one third and one half of all young women with type 1 diabetes skip or alter insulin to control their weight (Larranaga, Docer, & Garcia-Mayor, 2011). See Table 3 for warning signs of eating disorders in this population. The Diabetes Eating Problem Survey (Markowitz et al., 2010) is a brief tool that can be used to evaluate and monitor symptoms of eating disorders among individuals with diabetes.

Clinical tools and resources: How to help patients

Much has been written on the need for and effectiveness of integrative primary care for diabetes management (Bogner et al., 2012; Phelps et al., 2009). A handful of empirical studies have examined the feasibility and effectiveness of NP-led minimal psychological interventions in primary care settings. These studies revealed that with relatively little time and expense, NPs can learn to identify symptoms of depression and anxiety and to provide a minimal psychological intervention. Moreover, these efforts resulted in improvements in mood, quality of life, and blood glucose levels (Lamers et al., 2010; Lamers, Jonkers, Hans Bosma, Knottnerus, & van Eijk, 2011; Meeuwissen, Holleman, de Jong, Nuyen, & van der Feltz-Cornelis, 2011). For those who do not have access to this type of training, we present some simple and practical ways to help patients struggling to cope with their emotions and managing their illness. These strategies are a natural complement, not replacement, for standard medical care, and could be useful when dealing with patients with a variety of chronic illnesses.

Although this may seem obvious, these patients first need us to *listen* to them. As healthcare professionals we know more about diabetes and the medical aspects of illness and treatment, but patients are always the expert on their personal journey with diabetes. The more we listen, the better we are able to provide effective and compassionate care. Second, we can *empathize*. All patients need and want to feel cared about on a personal level. A simple "That sounds tough" or "I'd feel the same way if that happened to me" goes a long way. Active listening and expressing empathy would be a helpful way to begin the conversation with George. It would also help the NP better understand why he is experiencing more difficulty managing his illness over the last few months.

Third, one can *assess* at least five important domains for potential deficits. *Assess the need for educational coaching*, such as whether or not patients understand how to use their blood glucose meter, how to recognize the signs of hypoglycemia, and the effects of exercise on glucose and insulin levels. *Assess the patient's self management skill level*. For example, do patients take extra precautions when they are sick? Are they actively involved in preventative care for diabetes such as foot care? Referral to a Certified Diabetes Educator is appropriate if there are educational or skill gaps. *Assessment of self-efficacy* is also important as low self-efficacy is related to poor adherence to treatment and poorer health outcomes (Mishali, Omer, & Heymann, 2011). It is important to *assess emotional status* regularly, particularly at the time of diagnosis and at key illness turning points. Eliciting feelings about the diagnosis of diabetes, complications, and self-care requirements can also be useful. More serious mental health concerns and symptoms should spur a referral to a mental healthcare provider. Finally, *assess social support* available to the patient, both in terms of quantity and quality. The support of family and friends can be very beneficial and should be identified and encouraged. NPs can also help patients to recognize the negative impact of some relationships and strategize ways to reduce exposure or reaction to these sources.

Assessing these five key areas with George would likely reveal a worsening in his emotional status (i.e., depression and anxiety) and a decrease in social support (i.e., the loss of his best friend) and self-efficacy (i.e., new worries about dying of a heart attack because of his diabetes). Knowing this important information would guide the NP to make appropriate intervention choices.

We will briefly describe four practical tools NPs can use if the assessment revealed deficits in certain areas. The first tool is *equipping patients for SELF-management*. This requires rethinking NPs' role in managing illness, and understanding that the responsibility for managing the illness rests primarily on the one living with the illness, not the NP. Providers move from being the "diabetes police," focusing on "good and bad numbers," to teachers and coaches who equip their patients with the knowledge, skills, and self-confidence to take care of themselves. NPs spend a very limited amount of time with patients each year; the majority of the work and change in patients' lives occurs outside the clinic. It is imperative that patients are equipped to deal effectively with their illness and its challenges as they go about their daily lives.

The American Diabetes Association (ADA) and the American Association of Diabetes Educators (AADE) have published evidence-based standards of practice for patient-centered empowering communication approaches for improving glycemic and quality-of-life outcomes (ADA, 2012). One such evidence-based equipping approach is motivational interviewing (Rollnick, Miller, & Butler, 2007). This method of dialoguing with patients helps them to see the discrepancies between their desired versus actual behavior and outcomes. A key principle of this approach is that patients themselves come up with the reasons to change their behaviors, rather than the provider doing this for them. This method reduces the frustration that can arise in both the patient and the provider when change feels forced upon rather than desired.

The second tool that NPs have in their tool box is *encouraging self-care*. By self-care we mean more than diabetes management. Certainly, self-care includes making healthy dietary choices and exercising, but these are things that patients already "have to" do to manage their diabetes. Self-care refers to broader quality of life issues: Is sleep adequate? Are patients engaging in pleasurable and rewarding activities? Is there conflict at home that needs to be addressed? What is their energy level and overall life satisfaction? Although these questions have not historically seemed "medical," they factor into how patients are able to manage their illness. Encouraging self-care also demonstrates concern on a personal, not just illness-based level. George would benefit from engaging in more self-care, particularly during this time of mourning. An NP could help him identify which self-care activities he thinks would be most helpful for him.

Third, you can *teach brief stress management techniques* to patients. Relaxation and stress management skills are an important piece of diabetes self-management. There are many types of relaxation strategies; what matters is that the strategy works for the individual. The more the strategies are used to keep stress levels low, the more likely they are to reap the many associated benefits, including healthier immune systems, improved mood, better digestion and weight management, and even improved sexual desire and performance. We will describe two stress management skills.

Begin with an explanation of stress and diabetes: People are much more open to accepting the fact that they need to decrease their stress levels, and implement strategies to do so, if they first understand why this will benefit them. The following description may be a helpful guide:

> *Stress is a normal part of life, and short-term stress can actually be beneficial; it can motivate us to change our behavior or accomplish a goal. But long-term stress leads to distress, exhaustion, and disease because our internal resources are eventually depleted. Our immune and endocrine systems are especially vulnerable to stress. That is why you are more likely to catch a cold when you are feeling stressed. Stress also worsens blood sugar levels because it causes an increase in cortisol, insulin, cholesterol, and a decrease in immune functioning. Stress can also have a negative impact on blood sugar levels because of its impact on our behaviors, thoughts, and emotions. It is harder for us to take care of ourselves when we are overwhelmed.*

Teach "slow" diaphragmatic breathing skills: Slow diaphragmatic breathing, preferably in through the nose and out through the mouth, is one of the most powerful ways to turn off the stress response, induce relaxation, decrease anxiety, and improve sleep (Winbush, Gross, & Kreitzer, 2007). You can demonstrate this by having the patient put one hand on her chest and one on her belly. Both hands should be moving as she breathes, particularly the hand on the belly. If she is only breathing from her chest, you can work with her to deepen and slow her breathing. Patients will often comment spontaneously how relaxed they feel after only 30 s of this type of breathing.

Teach mindfulness meditation: Cultivating a more mindful way of being is associated with less emotional distress, greater well-being, and enhanced quality of life (Greeson, 2009). It also has positive effects on stress hormones, immune functioning, and health behaviors, such as eating and sleeping (Winbush et al., 2007). Practicing mindfulness can be done through formal sitting and breath-based meditation, as well as intentionally directing (and redirecting) one's attention to the present moment throughout the day. Training one's mind to stay focused

Table 4 When a referral to a mental health professional is beneficial

- Emotional distress causing impairment in functioning
- Overuse of alcohol or illicit or prescription drugs
- Poor behavioral management of illness
- Difficulty adhering to medical treatment
- Requires more time and attention than is available
- Not making expected or desired progress in treatment
- Limited social support
- Relationship problems causing distress or interfering with health

in the present, rather than anticipating the future, results in improved attention, awareness, and acceptance, and greater well-being (Greeson, 2009). NPs can encourage their patients to stay focused on the present moment, paying attention to how they can best manage their illness today, rather than worrying about possible negative health complications in the future. They can also teach patients how to *eat mindfully*, savoring each bite of food they put into their mouths. Eating in this manner has been shown to decrease binge eating (Kristeller, Baer, & Quillian-Wolever, 2006). Interested patients can participate in a Mindfulness-Based Stress Reduction (MBSR) class to learn how to cultivate a daily meditation practice. These have become very popular programs and are offered at many medical centers around the country.

Teach patients how to intentionally plan well-being enhancing activities: Sheldon and Lyubomirsky (2007) reviewed the empirical literature on increasing subjective well-being and found that one of the most effective ways to increase happiness is though changing one's goals and activities. They found that the goals and activities must be positive, fit with one's personality and needs, be practiced diligently, vary in their timing, and provide continuous fresh positive experiences. Several specific activities with experimental support for enhancing well-being include contemplating best possible selves, the practice of cultivating gratitude, being kind, replaying happy life events, savoring daily experiences, and employing one's strengths (Sheldon & Lyubomirsky 2007). NPs can help patients to identify activities, particularly from those stated above, that they would enjoy doing and help them plan how to creatively implement this plan during the next week. They should be reminded to vary how and when they engage in the activity for maximal benefit. Patients can track changes in their mood across time as they participate in the activity. Future visits can be used to modify the activity and/or problem solve if there has been no change in subjective well-being.

A final useful tool when patients are struggling with the psychological ramification of living with diabetes is *offering additional mental health support*. Table 4 provides a list of situations in which a referral to a mental health professional is likely to be beneficial. Psychologists are trained to determine whether or not a person's reaction is a normal response to living with diabetes, an adjustment disorder requiring therapy and skills training, or a serious mental illness that requires therapy and medication (White, 2001). Psychiatric mental health APRNs are also very well equipped to provide care and ongoing treatment. Cognitive behavioral therapy (CBT) has been shown to be an effective treatment for psychological and behavioral problems associated with diabetes (Markowitz et al., 2011). CBT equips patients to identify, challenge, and change maladaptive beliefs that may be compromising their mood and illness management (e.g., "I am a failure because I have a high A1C."). CBT also helps patients to begin positive behaviors and cease harmful behaviors, which impacts their mood and thinking style.

Given the fact that George admitted to drinking alcohol to help him fall asleep, is experiencing several indicators of depression and anxiety, and is having more difficulty managing his illness, a referral to a mental health professional is warranted. As is the case with patients in general, George may be more open to working with a mental healthcare professional if he is informed of what to expect in therapy and how it will help him. Understanding CBT as a skills-based treatment helps many to embrace therapy and not feel that their concerns have been dismissed. More complex cases may need medication management through primary care or a referral to a psychiatrist. Developing a network of mental healthcare providers who are proficient in working with people with diabetes can be very useful.

Conclusion

Patients with diabetes have unique challenges that can worsen existing psychological problems and increase the risk for developing certain mental illnesses, such as depression, anxiety, and eating disorders. It is important to acknowledge and identify a patient's emotional distress related to diabetes. There are a number of tools NPs can use during a routine office visit, including equipping patients for self-management, encouraging self-care, and teaching relaxation strategies. For some patients, such as George, NPs can best intervene by making a referral to a mental health professional. Addressing the psychological aspects of illness is an important part of caring for people with diabetes, and we hope this practical guide will even better equip NPs to do so.

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